

## REMARKS

Favorable reconsideration of this application, in light of the following discussion and in view of the present amendment, is respectfully requested.

Claims 11, 12 and 26 are amended. Claims 11-30 are pending.

### **I. Rejection under 35 U.S.C. § 102**

In the Office Action, at page 3, numbered paragraph 3, claims 11-13, 15, 17, 21, 23, 25 and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,905,234 to Childress et al. This rejection is respectfully traversed because Childress does not discuss or suggest:

transmitting data in parallel from a transmitting station to a data-receiving station over at least two relay stations, each relay station receiving and forwarding the data;

generating requests for retransmission if it is determined that the received data is not sufficiently free of errors, the requests for retransmission being generated only at the receiving station; [and]

transmitting the requests for retransmission from the receiving station through at least one of the relay stations,

as recited in amended independent claim 11.

Childress discusses a communications system 50 including a data originating mobile digital radio communications transceiver ("DOM") 52, a repeating radio communications transceiver ("repeater") 54, and a destination digital radio communications transceiver ("DEM"). The DOM 52 transmits digital data through repeater 52 (operating on one or more predetermined radio frequency communications channels) to the DEM 56. The repeater 54 receives, detects, regenerates and retransmits the data bursts over radio frequency communications link 60 to the DEM 56. Upon receipt of a transmitted data burst, the DEM 56 transmits to the DOM 52 an acknowledge signal which acknowledges receipt of the data and specifies whether the data has been correctly received. The DEM 56 responds with the acknowledge message 170 that includes whether the data packets in the last-transmitted data burst were received correctly or incorrectly by the DEM 56 and which requests the DOM 52 to retransmit incorrectly received packets.

Childress discusses that the repeater 54 receives, detects, regenerates and retransmits the data bursts. Detects implies that the repeater 54 detects the existence of a data burst or

empty bursts. Regenerates may imply an amplification of the received signal strength and not necessarily an error correction.

Childress discusses that the transceiver 52 may be in communication with one or more repeaters or other transceivers or base stations over a radio frequency or other form of communication channel. However, Childress does not go into more detail regarding the transmission of data from the transceiver 52 to the one or more repeaters. Childress does not discuss or suggest that the transceiver 52 transmits data in parallel over at least two relay stations, such that each relay station receives and forwards the data to a data-receiving station. Childress discusses only that the transceiver 52 transmits data through a repeater 54. However, Childress does not suggest that the same set of data is simultaneously transmitted in parallel to plural relay stations, or repeaters.

In contrast, in the present invention of claim 11, for example, data is received by a plurality of relay stations, where the data has been transmitted in parallel from a transmitting station. Thus, the present invention of claim 11, for example, provides for parallel transmission via several paths and then generation of requests for retransmission at the receiving station if it is determined that the received data is not sufficiently free of errors.

Childress, on the other hand, discusses only that the transceiver 52 transmits data through one or more repeaters 52 over a radio frequency. The transceiver 52 can send the same data burst on the same frequency using the same timeslot (for TDMA) to several repeaters or the transceiver can send different data on the same frequency using different timeslots for the different data respectively. Childress does not suggest that the transceiver 52 transmits the same set of data in parallel to multiple repeaters, which allows for parallel transmission of data via several paths.

As discussed in the background of the present specification, one of the problems with SFN (Single Frequency Network) communication systems, is that if one and the same signal is received by a plurality of relay stations simultaneously or with a slight delay, for transmission to a receiving station, then, to ensure error-free data transmission, error detection and correction methods, such as an automatic request to repeat the transmission of an original or modified data packet, are utilized. The error detection and correction methods are applied to each transmission from the transmitting station to an adjacent relay station, to each transmission from one relay station to another relay station, and to each transmission from a relay station to the receiving station, which results in an increased level of computing power and time expenditure. Thus, as the present invention of claim 11, for example, transmits data in parallel to at least two

relay stations, but only generates requests for retransmission at the receiving station if it is determined that the received data is not sufficiently free of errors, the present invention of claim 11, for example, can avoid increased computing power and time expenditure for error detection and correction.

Therefore, as Childress does not discuss or suggest “transmitting data in parallel from a transmitting station to a data-receiving station over at least two relay stations, each relay station receiving and forwarding the data; generating requests for retransmission if it is determined that the received data is not sufficiently free of errors, the requests for retransmission being generated only at the receiving station; [and] transmitting the requests for retransmission from the receiving station through at least one of the relay stations,” as recited in amended independent claim 11, claim 11 patentably distinguishes over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Additionally, Childress does not discuss or suggest “transmitting data in parallel from a transmitting station to a data-receiving station over at least two relay stations, each relay station receiving and forwarding the data; acknowledging receipt of the data with an acknowledgement by the data-receiving station; [and] transmitting requests for retransmission from the data-receiving station through at least one of the relay stations,” as recited in amended independent claim 12. Therefore, claim 12 patentably distinguishes over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Further, Childress does not discuss or suggest “a receiving device to receive data destined for a receiving station, the data being parallelly transmitted from a transmitting station of the radio communication station; an analyzing device to analyze said data with regard to its reception quality and produce a reception result; and a transmitting device to selectively forward the data to the receiving station, depending on directly receiving the reception result of the analyzing device,” as recited in amended independent claim 26. Therefore, claim 26 patentably distinguishes over the reference relied upon. Accordingly, withdrawal of the § 102(b) rejection is respectfully requested.

Claims 13, 15, 17, 21, 23 and 25 depend either directly or indirectly from independent claim 11 and include all the features of claim 11, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 13 recites that “at least one of the relay stations checks the data received from the transmitting station with regard to reception quality, if the reception quality does not meet a determined level of quality of the received data, the relay station does not forward said data to the receiving station, and if the reception quality

meets the determined level of quality of the received data, the relay station does forward said data to the receiving station.” Childress does not discuss or suggest that the repeater 54 checks the data received from the transmitting station and forwards or does not forward the data based on a determined level of quality of the received data. Therefore, claims 13, 15, 17, 21, 23 and 25 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §102(b) rejection is respectfully requested.

## **II. Rejection under 35 U.S.C. 103**

In the Office Action, at page 7, numbered paragraph 4, claims 14, 16, 18-20, 22, 24 and 27-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Childress in view of U.S. Patent No. 7,113,745 to Khayrallah et al. This rejection is respectfully traversed.

As discussed above, Childress does not discuss or suggest all the features of amended independent claims 11 and 26. Khayrallah fails to make up for the deficiencies in Childress. Therefore, claims 11 and 26 patentably distinguish over the references relied upon.

Claims 14, 16, 18-20, 22, 24 and 27-30 depend either directly or indirectly from independent claims 11 and 26 and include all the features of their respective independent claims, plus additional features that are not discussed or suggested by the reference relied upon. For example, claim 16 recites that “a plurality of the relay stations receive the data in parallel, check the reception quality of the data and produce a reception result, and in at least a first relay station, a determination is made on whether or not to forward the data based on the reception result of the first relay station and based on the reception result of another relay station.” Neither Childress nor Khayrallah, alone or in combination, suggest that relay stations receive data in parallel and that a determination is made as to whether or not to forward the data based on reception results of both a first and a second relay station. In the present invention of claim 16, for example, the relay stations implicitly communicate between themselves in order to make the determination as to whether or not to forward the data. Neither Childress nor Khayrallah discuss such.

Therefore, claims 14, 16, 18-20, 22, 24 and 27-30 patentably distinguish over the references relied upon for at least the reasons noted above. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

**Conclusion**

In accordance with the foregoing, claims 11, 12 and 26 have been amended. Claims 1-10 were previously cancelled. Claims 11-30 are pending and under consideration.


There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: December 19, 2008

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